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ABSTRACT

A study was undertaken to determine if secondary vocational educators require additional skills to teach adult students enrolled in their classes. The technique selected to implement the study was the DACUM or "Develop a Curriculum" method for analyzing occupational competencies within the vocational education spectrum. A DACUM team produced a list of six categories and 35 teaching competencies needed by secondary teachers who teach adults. The six categories called on teachers to: promote the adult vocational program, provide for learner needs, plan for instruction, use appropriate instructional techniques, manage the adult learning environment, and provide a customized curriculum. Thirty usable validation instruments were returned by trade and industrial teachers of adults in Pennsylvania. The validation instrument gathered information on whether the competency was needed by secondary vocational teachers when working with adults; whether the competency was performed differently, in addition, or more frequently by teachers of adults; and the importance of the competency. Four competencies were found to be significantly more important to postsecondary teachers. Data indicated that teaching strategies designed for secondary students do not necessarily equate with effective adult education. Plans were made to develop learning guides on adult education teaching skills focusing on the competencies identified by the study. (YLB)

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PREPARING SECONDARY VOCATIONAL TEACHERS TO WORK WITH ADULT STUDENTS

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PREPARING SECONDARY VOCATIONAL TEACHERS TO WORK WITH ADULT STUDENTS

Preparing adults for employment has always been an important part of vocational education. Currently, adult vocational education is becoming even more important as advances in technology cause adults' educational needs to multiply and demographic trends continue to increase the size of the adult working population (Goetsch, 1984). Developments in business and industrial technology are imparting a significant change in job descriptions of present-day workers. Existing occupations are being altered in content and scope, new occupations are springing up rapidly and still others are becoming outdated or eliminated. In the light of these changes, it becomes apparent that meeting the educational needs of adult workers is a challenge confronting all educators in vocational training settings. Instructors of secondary vocational students have noticed a recent, marked increase in the enrollment of adults in both daytime and evening classes. Adults are returning to their regional or area vocational/technical schools to upgrade present job skills or to prepare themselves for new jobs. As this trend will certainly continue, we must ask ourselves if the instructor of secondary students has the wherewithal to teach adult students effectively. Vocational educators typically have been expected to have a strong technical base in their areas of specialization and preparation in pedagogy for the management of high school-age students. Few--if any--however, have had normal, structured preparation for understanding adults as learners and lack a clear perspective of the (adult education) field (Copeland and Leahy, 1984).

Recently, a research effort was undertaken to determine if secondary vocational educators require additional skills in order to teach adult students enrolled in their classes. The study was carried out at the Center for Vocational Personnel Preparation at Indiana University of

Pennsylvania. Vocational instructors in IUP's geographic area have traditionally received training in pedagogy through a field, competency-based teacher preparation program. When vocational teacher educators at IUP became aware of the increasing numbers of adults in vo-tech schools in their service area, they felt it prudent to identify the andrologogical skills their undergraduates would need to be effective teachers of these older learners.

The technique selected to implement the study was the DACUM method. DACUM is the acronym for "Develop a Curriculum" and is a procedure which was developed at Holland College in Atlantic, Canada, then subsequently used with success at the National Center for Research in Vocational Education in Columbus, Ohio. It has proven to be a valid, effective and reliable method for analyzing occupational competencies within the vocational education spectrum.

After completing a review of literature in the area of andrologogy, a panel of ten experienced teachers and teacher supervisors was selected, following the operational guidelines for a DACUM team outlined by the National Center. Each team member had taught both secondary students and adults during his or her tenure as a teacher in Pennsylvania's vocational schools. The team's leader was Dr. Robert Norton, a nationally recognized expert in the DACUM process, from the National Center for Research in Vocational Education.

After two days of discussion, deliberation and revision, Dr. Norton and the DACUM team produced a list of six categories and 35 teaching competencies they felt were needed by secondary vocational teachers who teach adults. The six categories were:

A. Promote the Adult Vocational Program

B. Provide for Learner Needs

C. Plan for Instruction

D. Use Appropriate Instructional Techniques

E. Manage the Adult Learning Environment

F. Provide a Customized Curriculum

The DACUM panel identified 35 teaching competencies within these six categories. The competencies are listed in Table 1.

Validation Procedures

After the list of categories and competencies was generated by the DACUM team, a validation instrument was designed following a model developed at the National Center for Research in Vocational Education. There are two schools of thought concerning the validation of DACUM results. The originators of the DACUM procedure at Holland College in Atlantic, Canada, represent the first group which believes that no further validation is necessary since the original panel was selected from qualified, regional practitioners. Other researchers disagree, however, and contend that there are inherent risks in adopting DACUM results without further input. Their contention is based on the implication that the DACUM team is much too small to represent a true sample of experts from any occupational group.

At IUP it was felt that the commitment to the study seemed more plausible with the addition of a validation process. Therefore, a validation instrument was sent to 154 trade and industrial teachers of adults in western and central Pennsylvania. The teachers were selected at random from a mailing list supplied by Pennsylvania's vocational education management information network. The list included teachers from secondary vocational schools, two-year trade/technical schools, and four-year colleges with vocational teacher preparation program. Respondents were

Table 1
Competencies Generated by DACUM Panel

A. Promote Vocational Adult Program
   A-1 Assist with the identification of potential adult students
   A-2 Help develop promotional materials
   A-3 Participate in the recruitment of students
   A-4 Participate in the student selection process
   Other

B. Provide for Learner Needs
   B-1 Collect background data on students
   B-2 Assess technical skill level upon program entry
   B-3 Assess employability skill level upon program entry
   B-4 Assess lifestyle responsibilities of adults
   B-5 Provide for lifestyle responsibilities of adults
   B-6 Help the adult adjust to the role of student
   B-7 Refer students to helping agencies
   Other

C. Plan for Instruction
   C-1 Manage logistical arrangements for the training program
   C-2 Provide supplemental learner activities
   C-3 Provide supplemental learner resources
   C-4 Plan for use of community resources
   Other

D. Utilize Appropriate Instructional Techniques
   D-1 Promote self-directed learning
   D-2 Direct students in guiding other students
   D-3 Use adult students as resource people
   D-4 Use directed questioning techniques
   D-5 Use problem-solving techniques
   D-6 Use the project method
   D-7 Use individualized learning packages
   D-8 Use small group techniques
   Other

E. Manage the Adult Learning Environment
   E-1 Develop a philosophy for working with adult learners
   E-2 Demonstrate acceptance of the adult as a learner
   E-3 Implement an equitable discipline policy
   E-4 Maintain an informal atmosphere
   E-5 Use participatory decision-making procedures
   E-6 Promote inter-generational acceptance
   E-7 Simulate the work environment
   Other

F. Provide a Customized Curriculum
   F-1 Develop a philosophy for delivering a customized training program
   F-2 Establish contact with the client(s)
   F-3 Maintain contact with client(s)
   F-4 Assess needs of client(s)
   F-5 Develop customized curriculum

required to have taught both secondary and adult students during their teaching careers. The educators who met these criteria were instructed to review the six categories and the 35 competencies, then write in additional ones they considered to have been overlooked by the DACUM team. They were then instructed to respond to five questions about each competency. The questions were:

1. Is this a competency needed by secondary vocational teachers when working with adults?
2. Is the competency performed differently by teachers of adults than by teachers of secondary vocational students?
3. Is the competency performed in addition to those a vocational teacher would perform with secondary students?
4. Is the competency performed more frequently with adults than with secondary students?
5. How important is the competency in your job as a teacher of adult students?

The purpose of designing the validation instrument in this manner was two-fold. The first purpose was to receive further input from educators on categories and competencies which may have been overlooked by the DACUM team. The second purpose (fulfilled by posing the 5 questions) was to determine which competencies were most crucial to the effective teaching of adults in vocational classroom and laboratory settings.

The last page of the validation instrument was a demographic data sheet which was attached to gather information in selected areas, such as number of years teaching secondary students, adult students, age of respondents, sex of respondents, and so on.

Data Analysis

Of the 154 questionnaires distributed to vocational educators in Pennsylvania, 100 were returned--a return rate of 65 percent. Of these, 30 were usable, that is, these 30 respondents had taught in both secondary and adult classroom settings. Demographic data for the group is shown in Table 2.

Table 2
Demographic Data of Respondents

SEX
17 females
13 males

AGE
5 persons under 31 years of age
13 persons between 31 and 45 years of age
12 persons over 45 years of age

PRESENT TEACHING ASSIGNMENTS
5 persons who taught at the secondary level
25 persons who taught at the postsecondary level

NUMBER OF YEARS TEACHING ADULTS
15 persons who had taught adults for less than 5 years
8 persons who had taught adults for 6-10 years
3 persons who had taught adults for 11-15 years
2 persons who had taught adults for 16-20 years

COMMUNITY POPULATION
12 persons who taught in a community with a population less than 100,000
18 persons who taught in a community with a population greater than 100,000

NUMBER OF YEARS TEACHING VOCATIONAL SUBJECTS
21 respondents who had taught vocational subjects less than 1 year
3 respondents had taught vocational subjects for 6-10 years
5 respondents had taught vocational subjects for 11-20 years
1 respondent had taught vocational subjects for more than 20 years

EDUCATIONAL EXPERIENCE
1 respondent had no college education
8 respondents had vocational certification (60 college credits in PA)
6 respondents had an associate degree
5 respondents had a bachelor's degree
10 respondents had a master's degree

Data from responses to the five questions about each competency were weighted for analysis in the following manner:

Question 1.	Is the competency needed?	Yes = 6	No = 1	Not sure = 2
Question 2.	Is the competency performed differently?	Diff = 3	Not = 1	Not sure = 2
Question 3.	Is the competency performed additionally?	Yes = 3	No = 1	Not sure = 2
Question 4.	Is the competency performed more frequently?	Yes = 3	No = 1	Not sure = 2
Question 5.	How important is the competency?	Imp = 6	Not = 1	Not sure = 2

In scoring each item, the weighting of all five questions on each competency were added together to derive a total score for that competency. This score was then averaged across each of the questionnaires to yield a mean score for each of the 35 competencies. The highest score possible for any one item was 21. The lowest possible score was 5. Based on the mean scores, then, the competencies were ranked in importance as shown in Table 3.

Only one of the 31 respondents used the write-in option which asked for additional categories and competencies. This person indicated that he considered category "F" to be a replication of category "D", since, to him "Providing a Customized Curriculum" is the same as, "Utilizing Instructional Techniques." None of the other 30 respondents used the write-in option.

Further manipulation of data was carried out using a chi-square analysis. The analysis showed four competencies to be significantly more important to teachers who were currently teaching in a post-secondary vocational program. The four competencies are shown in Table 4.

Table 3

Rank Order of Competencies Based on Statistical Analysis of Survey

Rank	Category	X Score	Competency
1.	A2	20.04	Help develop promotional materials
2.	E1	19.71	Develop a philosophy for working with adults
3.	A4	19.62	Participate in the student selection process
4.	E2	19.07	Demonstrate acceptance of the adult as a learner
5.	B6	19.00	Help the adult adjust to the role of student
6.	B7	18.96	Refer students to helping agencies
7.	D7	18.19	Use individualized learning packages
8.	F4	18.12	Assess the needs of clients
9.	C4	18.11	Plan for the use of community resources
10.	D1	18.10	Promote self-directed learning
11.	D3	18.01	Use adult students as resource people
12.	F5	17.73	Develop a customized curriculum
13.	A1	17.72	Assist with the identification of adult students
14.	B3	17.50	Assess employability skill level upon program entry
15.	F3	17.44	Maintain contact with the client
16.	E5	17.36	Use participatory decision-making techniques
17.	A3	17.35	Participate in the recruitment of students
18.	E6	17.27	Promote inter-generational acceptance
19.	F2	17.27	Establish contact with client(s)
20.	D8	17.15	Use small group techniques
21.	E4	17.04	Maintain an informal atmosphere
22.	F1	16.82	Develop a philosophy for delivering a customized training program
23.	B2	16.52	Assess technical skill level upon program entry
24.	E7	16.44	Simulate the work environment
25.	D5	16.39	Use problem-solving techniques
26.	C2	16.37	Provide supplemental learner activities
27.	C3	16.37	Provide supplemental learner resources
28.	C1	16.00	Manage logistical arrangements for the training process
29.	B1	15.93	Collect background data on students
30.	B4	15.63	Assess lifestyle responsibilities of students
31.	B5	15.09	Provide for lifestyle responsibilities of students
32.	D6	14.93	Use the project method
33.	D2	14.38	Direct students in guiding other students
34.	D4	13.65	Use directed questioning techniques
35.	E3	12.52	Implement an equitable discipline policy

Table 4
Competencies Found to be Significantly More Important to Post-Secondary Educators

Competency No.	Competency	Level of Sig.
A-2	Help Develop Promotional Materials for the Adult Vocational Program	.0239
B-4	Assess the Lifestyle Responsibilities of Adults	.0262
D-3	Use Adult Students as Resource People	.0492
E-3	Implement an Equitable Discipline Policy	.0029

One competency was found to be significantly more important to females. That competency was E-4, "Maintain an informal atmosphere" (.0146).

Implications for Teacher Education

Data collected in this study indicate that pedagogical teaching strategies designed for secondary students do not necessarily equate to effective adult education. At IUP, we plan to use the results of the research effort in the development of field, competency-based learning guides to teach undergraduate, in-service instructors who are enrolled in IUP's teacher preparation program. At present, teachers use the Ohio State University PBTE modules, and for continuity, the learning guides on adult education teaching skills will follow the same format. The four-step outline for writing the guides will be as follows:

Step 1. Perform a task analysis to determine the required knowledge, attitudes and performances of the teacher.

Step 2. Develop a Teacher Performance Assessment Form which provides a checklist for evaluating the teachers based on the task analysis.

Step 3. Write "enabling" and "terminal" objectives for the guide.

Step 4. Write information sheets and learning experiences which will provide the teacher of adults with the knowledge and practice needed to achieve the objectives.

The initial development of learning guides will focus on the top five competencies as ranked by the educators who responded to the validation instrument. They are:

1. Help develop promotional materials.
2. Develop a Philosophy for working with adults.
3. Participate in the student selection process.
4. Demonstrate acceptance of the adult as a learner.
5. Help the adult adjust to the role of student.

It was interesting to note that these five competencies were also mentioned in the review of literature on the subject of adult education. Ferguson (1984) for example, agreed with the need for competencies one and three when she wrote that, "all vocational educators have an important role to play in the recruitment and retention of adult students." She also stressed the application of effective marketing principles that "will appeal to a comprehensive adult audience."

Patrick Penland, in a recent article about various learning styles of adults, mentioned the importance of helping the adult adjust to the role of student. He suggested that this, and the acceptance of adults as learners, can be accomplished through the use of needs assessments and an effort to individualize instruction according to each adult's educational requirements.

The importance of developing a philosophy for working with adults can be seen in federal legislation like the Perkins Vocational Education Act of 1984 and in the writing of authors like Pratzner and Ashley, Aslanian, and Smith. Each of these essays recognizes that a foundation must be built upon which adults can build a framework of lifelong education pursuit.

It should be obvious that the literature is full of many processes,

methods and techniques which can be used for preparing secondary teachers who will have adults in their classrooms at some future date. However, such profusion can be frustrating, indeed. The DACUM study and the questionnaire which followed were effective procedures for narrowing the vast amount of information that has been written about androgogy and was instrumental in targeting those skills that will be most effective in the preparation of vocational educators of adult students.

Reference List

All references cited herein have been taken from the following source:

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